

Amendments to the Claims

Please amend Claims 1, 3-12 and 15-21. The Claim Listing below will replace all prior versions of the claims in the application:

Claim Listing

1. (Currently Amended) A method for detecting the presence of or absence of a bacterium, comprising the steps of:
 - a) contacting a sample with a detectably labeled synthetic serpin reactive site loop domain peptide substrate under conditions that result in modification of said substrate by an enzyme produced by a bacterium; and
 - b) detecting a modification or an absence of the modification of the substrate, the modification of the substrate indicating the presence of the bacterium in the sample and absence of the modification of the substrate indicating absence of the bacterium in the sample.
2. (Original) A method according to Claim 1, wherein the bacterium is a wound-specific bacterium selected from the group consisting of *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Streptococcus pyogenes*, *Pseudomonas aeruginosa*, *Enterococcus faecalis*, *Serratia marcescens*, *Proteus mirabilis*, *Enterobacter cloacae*, *Acetivobacter anitratus*, *Klebsiella pneumonia*, and *Escherichia coli*.
3. (Currently Amended) A method according to Claim[[s]] 1 ~~or~~ 2, wherein the enzyme is a protease.
4. (Currently Amended) A method according to ~~any of Claims 1-3~~ Claim 1, wherein the substrate is labeled with a fluorescent probe and a quencher dye molecule.
5. (Currently Amended) A method according to ~~any of Claims 1-4~~ Claim 1, wherein the substrate is labeled by a label selected from the group consisting of spin labels, antigen tags, epitope tags, haptens, enzyme labels, prosthetic groups, fluorescent materials, pH-sensitive materials, chemiluminescent materials, colorimetric components, bioluminescent materials, and radioactive materials.

6. (Currently Amended) A method according to ~~any of Claims 1-5~~ Claim 5, wherein the substrate comprises at least one of the peptides selected from the group consisting of EAAGAMFLEAIPK, EGAMFLEAIPMSIPK, KGTEAAGAMFLEAIPMSIPPEVK, GAMFLEAIPMSIPPE, and CGAMFLEAIPMSIPAAAHHHH.
7. (Currently Amended) A method according to ~~any of Claims 1-6~~ Claim 1, wherein the sample is selected from the group consisting of a wound surface on a subject and a body fluid.
8. (Currently Amended) A method according to ~~any of Claims 1-7~~ Claim 1, wherein the substrate is on a solid support.
9. (Currently Amended) A method according to ~~any of Claims 1-8~~ Claim 8, wherein the solid support is selected from the group consisting of a wound dressing, a container for holding body fluids, a disk, a scope, a filter, a lens, a foam, a cloth, a paper, a suture, a dipstick, a swab, a urine collection bag, a blood collection bag, a plasma collection bag, a test tube, a catheter, and a well of a microplate.
10. (Currently Amended) A method according to ~~any of Claims 1-9~~ Claim 8, wherein the solid support comprises a material required to be free of microbial contaminants.
11. (Currently Amended) A method according to ~~any of Claims 1-10~~ Claim 1, wherein the substrate comprises at least two dissimilar colorimetric components and the substrate is attached to a solid support, wherein modification of the substrate comprises cleaving at least a portion of the substrate that includes one of the colorimetric components, the cleaving resulting in a visible color change.
12. (Currently Amended) A method according to ~~any of Claims 1-11~~ Claim 11, wherein the colorimetric components are covalently attached to the peptide.
13. (Original) A biosensor for detecting the presence or absence of a bacterium in a sample, the biosensor comprising:

- a) a solid support and
 - b) a detectably labeled synthetic serpin reactive site loop (RSL) domain peptide substrate, said substrate attached to said solid support.
14. (Original) A biosensor according to Claim 13, wherein the substrate is specific to a protein produced by a wound-specific bacterium selected from the group consisting of *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Streptococcus pyogenes*, *Pseudomonas aeruginosa*, *Enterococcus faecalis*, *Serratia marcescens*, *Proteus mirabilis*, *Enterobacter cloacae*, *Acetobacter anitratus*, *Klebsiella pneumonia*, and *Escherichia coli*.
15. (Currently Amended) A biosensor according to Claims 14, wherein the protein is a protease enzyme.
16. (Currently Amended) A biosensor according to ~~any of Claims 13-15~~ Claim 13, wherein the substrate is labeled with a fluorescent probe and a quencher dye molecule.
17. (Currently Amended) A biosensor according to ~~any of Claims 13-16~~ Claim 13, wherein the substrate is labeled by a label selected from the group consisting of spin labels, antigen tags, epitope tags, haptens, enzyme labels, prosthetic groups, fluorescent materials, pH-sensitive materials, chemiluminescent materials, colorimetric components, bioluminescent materials, and radioactive materials.
18. (Currently Amended) A biosensor according to ~~any of Claims 13-17~~ Claim 13, wherein the substrate comprises at least one of the peptides selected from the group consisting of EAAGAMFLEAIPK, EGAMFLEAIPMSIPK, KGTEAAGAMFLEAIPMSIPPEVK, GAMFLEAIPMSIPPE, and CGAMFLEAIPMSIPAAHHHHH.
19. (Currently Amended) A biosensor according to ~~any of Claims 13-18~~ Claim 13, wherein the solid support is selected from the group consisting of a wound dressing, a container for holding body fluids, a disk, a scope, a filter, a lens, a foam, a cloth, a

paper, a suture, a dipstick, a swab, a urine collection bag, a blood collection bag, a plasma collection bag, a test tube, a catheter, and a well of a microplate.

20. (Currently Amended) A biosensor according to ~~any of Claims 13-19~~ Claim 13, wherein the solid support comprises a material required to be free of microbial contaminants.
21. (Currently Amended) A biosensor according to ~~any of Claims 13-20~~ Claim 13, wherein the substrate comprises at least two dissimilar colorimetric components covalently attached to the peptide.
22. (Original) An isolated peptide comprising a detectable label and an amino acid sequence selected from the group consisting of EAAGAMFLEAIPK, EGAMFLEAIPMSIPK, KGTEAAGAMFLEAIPMSIPPEVK, GAMFLEAIPMSIPPE, and CGAMFLEAIPMSIPAAHHHHH.